

**DRAFT ENVIRONMENTAL ASSESSMENT
CASPIAN TERN NESTING ISLANDS CONSTRUCTION PROJECT
SUMMER LAKE WILDLIFE AREA
LAKE COUNTY, OREGON**

INTRODUCTION

This Draft Environmental Assessment (EA) addresses construction of three 0.5 acre islands within the Summer Lake Wildlife Area of south central Oregon to provide nesting habitat for Caspian terns (*Sterna caspia*). The Summer Lake Wildlife Area is owned and operated by the Oregon Department of Fish and Wildlife.

Development of alternative nesting habitat locations for Caspian terns, in conjunction with social facilitation measures, is intended to reduce the number of these birds nesting in the Columbia River estuary, thereby reducing their predation on juvenile salmonids. For the period 2001-2005, Caspian terns consumed an estimated 4.2 million juvenile salmonids annually from the Columbia River estuary.

Summer Lake Wildlife Area is located approximately 100 miles southeast of Bend, Oregon, off Highway 31 at the community of Summer Lake in Lake County, Oregon. The wildlife area is situated on the northern end of the Summer Lake basin (Figure 1; figure adapted from ODFW's draft Summer Lake Wildlife Area Management Plan).

The proposed islands would be located in three locations within the Wildlife Area. The East Link Unit location in the northeast corner of the Wildlife Area, immediately south of Schoolhouse Lake, is a managed wetland. Dikes and water control structures are used to manage water levels in the unit. Prior to construction in late summer 2008, the East Link Unit will have been dry for approximately two years.

The Gold Dike location is also a managed wetland, with Gold Dike and Windbreak Dike and associated water control structures used to manage the water levels. The Ana River flows through this managed wetland complex. Construction in the Gold Dike Unit is anticipated to occur in late summer 2009 after the unit has been dry for approximately one year. Two 0.5 acre islands may be constructed in the Gold Dike area; however an alternative location, Dutchy Lake, is under consideration for construction of the third island.

Dutchy Lake is a permanent body of water located just southeast of the community of Summer Lake. The lake is approximately four feet deep throughout most of its area. It can not be drained. Consequently, we will evaluate the use of a floating island at this location for provision of Caspian tern nesting habitat.

PURPOSE AND NEED

The purpose of this action is to implement one element of the environmentally preferred management alternative as identified in the Corps' November 22, 2006 Record of Decision (ROD) that adopted the 2005 *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary, Final Environmental Impact Statement* (FEIS; USFWS et al., 2005; https://www.nwp.usace.army.mil/pm/e/en_plan_avian.asp). The need for the proposed action is to reduce the predation related loss of juvenile salmonids in the Columbia River estuary attributable to Caspian terns.

To assist accomplishment of the stated purpose and need, the Corps proposes to construct three 0.5 acre islands for Caspian terns nesting habitat and, in combination with social attraction measures, attract migrating Caspian terns to Summer Lake, Oregon. Social attraction entails use of Caspian tern decoys and playback of recorded Caspian tern colony vocalizations to attract Caspian terns to a location.

Caspian Terns

Increases in the number of Caspian terns nesting in the Columbia River estuary over the past decades led to significant concerns in the mid-1990s over their potential impact on the recovery of threatened and endangered Columbia River salmonids (salmon and steelhead). Based upon research results that documented substantial annual juvenile salmonid losses (12.4 million juvenile salmonids in 1998; Collis et al., 2006a), the Caspian tern nesting colony was shifted over the period from 1999-2001 via habitat management and social attraction actions from Rice Island (Columbia River mile 21) to East Sand Island (Columbia River mile 6) in order to diversify the diet of Caspian terns and lessen the number of juvenile salmonids consumed. Management efforts were also initiated and continue annually each spring to preclude their establishment of nesting colonies at the upper estuary locations of Rice, Miller Sands, and Pillar Rock Islands. This effort at upper estuary islands precludes Caspian terns from consuming higher numbers of juvenile salmonids compared to terns nesting at East Sand Island.

From 2001 to 2005 the average number of Caspian terns nesting at East Sand Island was approximately 9,108 pairs and they consumed an average of 4.72 million salmonid smolts annually (Collis et al., 2006b). Thus, a substantial savings in juvenile salmonids, approximately 6 to 7 million juvenile salmonids annually, was achieved by this initial management action. However, a considerable number of juvenile salmonids are still consumed by Caspian terns. Consequently, additional actions were considered necessary to reduce juvenile salmonid predation by Caspian terns (USFWS et al., 2005).

As a result of Caspian tern management actions proposed in 2000, Seattle Audubon, National Audubon, American Bird Conservancy, and Defenders of Wildlife filed a lawsuit against the Corps and the U.S. Fish and Wildlife Service (USFWS) alleging that compliance with the National Environmental Policy Act for the proposed action of attracting the large colony of Caspian terns from Rice Island to East Sand Island was insufficient and objecting to the potential take of eggs as a means to prevent tern nesting on Rice Island. In 2002, all parties reached a Settlement Agreement that stipulated that the USFWS, Corps, and National Marine Fisheries Service (NMFS) prepare an EIS to address Caspian tern management in the Columbia River estuary and juvenile salmonid predation. The FEIS was completed in January 2005. Records of Decision for the FEIS were issued by the USFWS (lead agency) and Corps in November 2006.

Summer Lake Wildlife Area

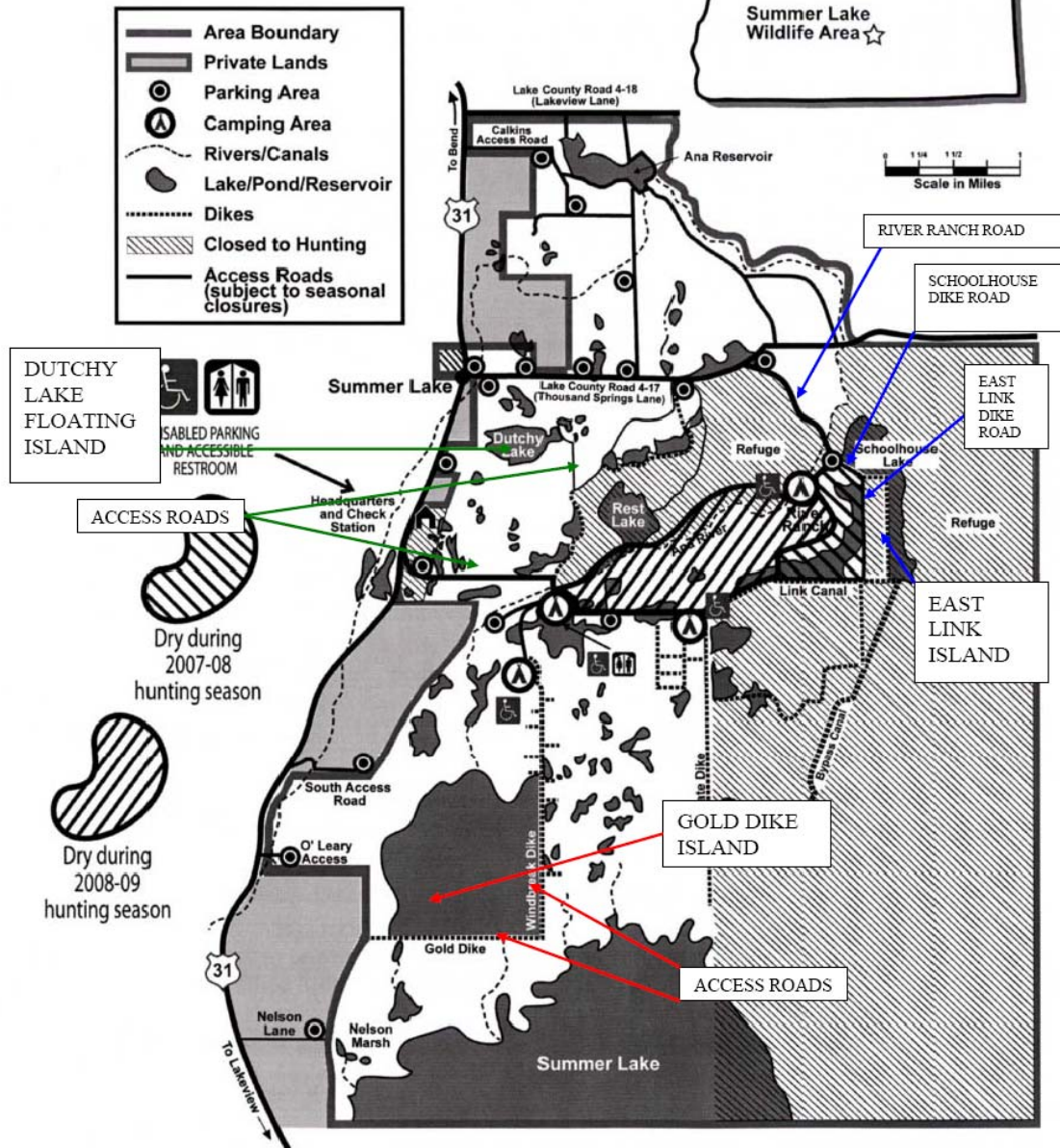


Figure 1. Summer Lake Wildlife Area – Caspian tern island construction locations and access routes.

The FEIS identified a management plan for Caspian terns in the Columbia River estuary that will reduce impacts to ESA-listed salmonids while ensuring the conservation of Caspian terns in the

Pacific region. The RODs by the USFWS and Corps adopted a modified Alternative C, the preferred alternative in the FEIS, which would reduce tern predation on juvenile salmonids in the Columbia River estuary by managing habitat to redistribute a portion of the tern colony on East Sand Island throughout the Pacific Coast region. The modification to the preferred alternative eliminated further consideration to the development or enhancement of tern nesting habitat at Dungeness National Wildlife Refuge in northwestern Washington due to National Marine Fisheries Service concerns over impacts to listed salmonids in Puget Sound (NMFS 2006).

The redistribution of Caspian terns outlined in the FEIS would be achieved by creating new or enhancing existing tern nesting habitat in Oregon and California and ultimately reducing the tern nesting site on East Sand Island to approximately 1.5 to 2.0 acres. To ensure a suitable network of sites is available for terns on a regional scale, the FEIS proposed to construct/enhance 2 acres of nesting habitat for every 1 acre of nesting habitat that would be eliminated on East Sand Island. The six alternative habitat locations identified as sites for Caspian tern nesting habitat development included Fern Ridge Lake, Summer Lake, and Crump Lake in Oregon, as well as three locations in San Francisco Bay. The proposed action described in this EA is expected to provide nesting habitat for Caspian terns at Summer Lake and thereby aid the redistribution of the Columbia River estuary Caspian tern population.

Summer Lake currently only supports an intermittent population of Caspian terns. Nesting by Caspian terns in south central Oregon is sporadic in nature due to fluctuating water levels and availability of suitable nesting islands.

Fisheries resources at or near the Summer Lake Wildlife Area are considered more than adequate to support a nesting population of Caspian terns. The Summer Lake Wildlife Area supports a large population of tui chubs. Introduced rainbow trout and sterile hybrid bass occur in Ana Reservoir and in the Ana River for at least four miles below the reservoir.

Other bird species expected to use the Summer Lake Island for nesting include American white pelicans, egrets, cormorants, great blue herons, and gulls. Most of these species currently nest on the wildlife area.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The proposed action entails construction of three 0.5 acre islands for Caspian tern nesting habitat in the Summer Lake Wildlife Area (SLWA), Oregon and, in combination with social attraction measures, attracting migrating Caspian terns to SLWA. The Wildlife Area does not currently contain consistently available, suitable nesting habitat for Caspian terns although small numbers of Caspian terns do attempt to nest there most years.

The proposed action at the SLWA represents the third implementation action for the preferred action as identified in the FEIS and subsequent RODs by the USFWS and Corps. Similar nesting islands have been constructed at Fern Ridge Lake near Eugene, Oregon and at Crump Lake near Adel, Oregon. Alternatives consideration was completed during the development of the FEIS (USFWS et al., 2005), which was programmatic in nature.

Habitat Construction

Three 0.5 acre islands are proposed for construction at the SLWA (Figure 1). Dutchy Lake, East Link Unit and an area north of Gold Dike and west of the Ana River are under consideration for construction of nesting islands for Caspian terns. Dutchy Lake is a permanent body of water and would provide nesting habitat for Caspian terns on an annual basis. The East Link and Gold Dike nesting island locations would occur in management units that are periodically dewatered for marsh vegetation management purposes. These units are not dewatered concurrently, thus one will provide appropriate nesting habitat conditions for Caspian terns and be surrounded by water to ward off mammalian predators each year.

Dutchy Lake

Dutchy Lake, the proposed location for a floating island, is located in Township 30S, Range 16E, Section 13. The island location would be in the approximate center of the lake. Dutchy Lake is a permanent body of water with an average depth of approximately four feet. The floating island would be constructed of modules constructed of recycled plastic. Individual modules would be connected to form an approximately oval shape to form the approximately 0.5 acre island. The surface elevation of the islands would be approximately 0.5-2.0 feet above the surface elevation of the lake, depending upon the final design.

Nesting areas, each approximately 18" in diameter encasing coarse sand/small gravel would be uniformly distributed on the island to serve as individual nesting sites. Roughly one nesting site per 10 square feet would be present on the floating island. The nesting areas would serve as potential nesting locations for terns and other species such as Canada geese, gulls, cormorants, American avocets, killdeer and black-necked stilts that are expected to compete for nesting sites on the floating island. The nature of the fill material and the porous recycled plastic, would contribute to drainage of each site in the case of rain, thus preventing loss of eggs or young to inundation. The surface of the entire island would be covered with approximately two inches of gravel/coarse sand to provide for a more natural substrate for terns and other birds to walk on rather than the fibrous recycled plastic that could occasionally entangle birds or cause bumblefoot. The volume of material placed upon the entire island would be approximately 300 cy.

Modules for the floating island construction would be initially staged at the SLWA equipment yard. Individual modules would be placed on trailers and gravel placed on them at the equipment yard. They would then be hauled to the east end of Dutchy Lake where equipment would be used to place them in Dutchy Lake. Once in the lake, the individual modules would be connected together. It is envisioned that subunits (5-10+ modules), once connected, would be pulled to the final location of the nesting island by motor boat and connected together to complete the 0.5 acre island. The island would be anchored in place. The construction timeframe is estimated to be between July 15 and October 1. This would place construction after the bulk of nesting species have raised their young to fledgling status and prior to the advent of the fall hunting season.

Approximately 50% or more of the island perimeter would have a beveled or ramped approach from the interior of the module to the water surface to ensure young birds could readily access the island or water. A gravelly surface material would be adhered to the recycled plastic at these ramp locations to preclude displacement by wave/animal action and prevent entanglement in the recycled plastic.

East Link Unit

The proposed island in the East Link Unit is located in the eastern portion of the SLWA, approximately 600 feet east of the western dike road paralleling the East Link Unit (Figure 1). East Link Unit is east of the Ana River (Figure 1). The construction of the island in the East Link Unit would occur in 2008.

Island construction in the East Link Unit would utilize quarry rock and coarse sand from the existing ODFW quarry off Carlon Lane, northwest of Ana Reservoir. Island construction is targeted for July 15 to September 30, 2008 to take advantage of the current dry lakebed. Work in the dry would greatly simplify the construction effort. The specific island site is characterized by bare ground when the unit is dewatered.

A temporary haul road will be constructed on the surface of the East Link Unit to provide an access route to the island construction location. The haul road would be constructed from the western portion of the East Link Dike Road, at the approximate center of the unit, for a distance of roughly 600 feet eastward to the island location. The junction of East Link Dike Road and the temporary haul road will be constructed to sufficient width to handle the turn radius of trucks hauling quarry rock to the East Link Island location. The haul road would be approximately 20 foot wide by approximately 600 feet in length. The temporary roadbed would consist of a layer of BX1200 geogrid on the ground surface, with a 12 inch layer of quarry waste. Approximately 900 cy quarry waste would be temporarily placed to construct the haul road within East Link. The access road would be removed upon completion of the nesting island. Rock from the access road removal will be spread atop the East Link Dike Road south of the turnoff to the nesting island. Rock placed on this section of the East Link Dike Road will be graded and leveled upon placement.

The proposed island would have a circular diameter of approximately 191 feet at the base (0.7 acres) and would rise approximately five feet above ground level to ensure an exposed surface exists during high water conditions (Figure 2). The nesting surface of the island would be approximately 0.5 acres and would consist of a 1.5 foot layer of coarse sand/small gravel (~1,210 cy). Side slopes would be constructed at one foot vertical to two feet horizontal. An estimated 3,314 cy of quarry rock and coarse sand would be required to construct the bulk of the island. Approximately 1,442 cy of large rock would be used to revet the shoreline of the island in East Link Unit. If a source of rip rap can not be located near the project area, then the diameter of the island will be enlarged to 211 feet (0.8 acres) to provide a sacrificial area for the limited amount of erosion anticipated, thus ensuring a surface area of 0.5 acres.

Rock and sand for construction of the East Link Island would be hauled in gravel trucks to the site via State Highway 31, Lake County Road 4-17 (Thousand Springs Lane) and three SLWA roads – River Ranch Road, Schoolhouse Lake Dike Road, and East Link Dike Road. These roadways, except Highway 31, are constructed of rock and pose maintenance issues when subjected to heavy truck traffic. These roadways will also generate a substantial volume of dust due to construction traffic, thus a water truck will be utilized for dust suppression. Water will be obtained on the SLWA at areas designated by ODFW. Truck speed on Thousand Springs Lane will be limited to 30 mph or less; truck traffic on SLWA roads will be limited to 25 mph or less.

Truck traffic will travel approximately 2.2 miles on Thousand Springs Lane before turning onto River Ranch Road. Three areas on Thousand Springs Lane, each approximately 50 feet long by 30 feet wide, have been identified as having soft subgrades that will degrade with truck traffic over them. Prior to construction, these sections of Thousand Springs Lane will be upgraded to handle truck traffic. It is proposed to excavate approximately two feet of the subgrade at these locations, lay down a geotextile fabric, and then reconstruct the road to grade with gravel. Approximately

350 cy of rock would be utilized to repair these soft spots in Thousand Springs Lane. Other locations on Thousand Springs Lane may degrade during the construction effort. Any degraded roadbed would be repaired during the construction effort in the manner noted earlier in this paragraph.

Truck traffic will travel approximately one mile on River Ranch Road prior to turning onto Schoolhouse Dike Road. River Ranch Road was graveled during a previous Ducks Unlimited construction effort on SLWA. Soft spots may be encountered on this roadway during construction of the East Link Island. The Corps proposes to address road repair on this stretch as they crop up during the construction effort. One turnout will be constructed on the SLWA at the junction of River Ranch Road and Thousand Springs Lane, another at the 0.5 mile marker on River Ranch Road and a third at the junction of River Ranch Road and Schoolhouse Dike Road to facilitate truck traffic. Turnouts will be approximately 100 feet long by 10 feet wide; an estimated 178 cy of rock would be used for turnout construction.

Truck traffic will travel 0.3 miles on Schoolhouse Dike Road before turning onto East Link Dike Road. Prior to construction, Schoolhouse Lake Road will be upgraded in order to handle heavy truck traffic and address loss of sideslopes due to erosion and slumps attributable to muskrat dens in the dike/roadbed. Initially, one foot of material (~600 cy) will be removed from the dike/road top to level the road course. The borrow material will be placed on the west slope of Schoolhouse Dike Road to repair erosive banks and to widen the roadbed enough to handle heavy truck traffic. Once the borrow and leveling of the roadbed has been completed, geotextile fabric will be laid down (~15 feet wide x 0.3 mile length) and then one foot of gravel (~900 cy) added to Schoolhouse Dike Road. This roadbed preparation should ensure road stability and maintain the dikes integrity for SLWA operations. An additional six inches of road rock may be added post-construction of the island if it is determined that the dike road has subsided due to truck traffic. A turnout (~110 cy) at the junction of Schoolhouse Dike Road and East Link Dike Road will be constructed on the west side of the roadway to facilitate traffic flow and allow trucks to turn onto East Link Dike Road. The road narrows at this location and the west slope of the dike is near vertical under current conditions. A survey marker that has been exposed by erosion at this location will be raised post-construction.

The East Link Dike roadbed will be graded and leveled (~1,200 cy) pre-construction to address muskrat dens and roughness. Post-grading, a geotextile fabric (15 feet wide by 0.4 miles long) will be laid down and then covered with one foot of gravel (~1,200 cy) to facilitate heavy truck traffic during construction. An additional six inches of road rock may be added post-construction of the island if it is determined that the dike road has subsided due to truck traffic. One turnout will be constructed at the junction of East Link Dike Road and the temporary access road (~67 cy).

Gold Dike

The proposed island in the vicinity of Gold Dike is located in the southern portion of the SLWA, approximately 600 feet north of Gold Dike and west of the Ana River (Figure 1). The island would be located in a relatively wide expanse of shallow water that stretches from Gold Dike northward to the emergent marsh vegetation zone. The construction of the island in the Gold Dike Unit would occur in 2009 after ODFW has dewatered the management unit for emergent marsh management purposes. Island construction in the Gold Dike Unit would utilize quarry rock and coarse sand from the existing ODFW quarry off Carlon Lane, northwest of Ana Reservoir.

A temporary haul road will be constructed on the ground surface of the Gold Dike Unit to provide an access route to the island construction location. The access road would be constructed from the Gold Dike Road for a distance of roughly 600 feet northward to the island location. The haul road

would be approximately 20 foot wide by approximately 600 feet in length. The temporary roadbed would consist of a layer of BX1200 geogrid on the ground surface, a 12 inch layer of quarry waste, another layer of geogrid and an additional 6 inches of quarry waste. Approximately 900 cy quarry waste would be temporarily placed to construct the haul road within Gold Dike. The junction of Gold Dike Road and the temporary haul road will be constructed to sufficient width to handle the turn radius of trucks hauling quarry rock to the Gold Dike Island location. Construction of the temporary access road and the island would occur in the dry. The access road would be removed upon completion of the nesting island. Rock from removal of the temporary access road would be spread in a shallow, uniform lift on Gold Dike Road west of the access point to the island.

The proposed island would have a circular diameter of approximately 195 feet (~0.7 acres) and would rise approximately six feet above ground level to ensure an exposed surface exists during high water conditions (Figure 2). The nesting surface of the island would be approximately 0.5 acres and would consist of a 1.5 foot layer of coarse sand/small gravel (~1,210 cy). Side slopes would be constructed at one foot vertical to two feet horizontal. An estimated 4,326 cy of quarry rock and coarse sand would be required to construct the bulk of the island. Approximately 1500 cy of large rock would be used to revet the shoreline of the island in the Gold Dike Unit. If a source of rip rap can not be located near the project area, then the diameter of the island will be enlarged to 211 feet (0.8 acres) to provide a sacrificial area for the limited amount of erosion anticipated, thus ensuring a surface area of 0.5 acres.

The Corps proposes to haul the rock materials (rip rap and coarse sand/gravel for nesting substrate) for island construction via truck to the site for placement, leveling and compaction. Rock and sand for construction of the Gold Dike Island would be hauled in gravel trucks to the site via State Highway 31, with trucks exiting Highway 31 at the SLWA access roadway approximately 0.25 miles south of the SLWA headquarters. Thereafter, truck traffic would occur on existing SLWA roads leading to Windbreak Dike and then Gold Dike. The SLWA roadways are constructed of rock and pose maintenance issues when subjected to heavy truck traffic. The access roadways leading to Windbreak Dike will be repaired during construction as required. These roadways will also generate a substantial volume of dust due to construction traffic, thus a water truck will be utilized for dust suppression. Water will be obtained on the SLWA at areas designated by ODFW. Truck speed on SLWA roadways will be limited to 25 mph or less.

Truck traffic will travel 1.4 miles on SLWA main access roads before turning onto Windbreak Dike Road and running south to Gold Dike Road. Prior to construction, 2.8 miles of Windbreak and 0.65 miles of Gold dike roads will be upgraded in order to handle heavy truck traffic and address loss of sideslopes due to erosion and slumps attributable to muskrat dens in the dike/roadbed. Initially, one foot of material will be removed from the Windbreak (~8,213 cy) and Gold (~1,907 cy) dike/road tops to level the road course. The borrow material will be placed on the slopes of Windbreak and Gold Dike Roads to repair erosive banks and to widen the roadbed enough to handle heavy truck traffic. Once the borrow and leveling of the roadbed has been completed, geotextile fabric will be laid down (~15 feet wide x 2.8 mile length for Windbreak Dike; 0.65 miles for Gold Dike) and then one foot of gravel will be added to Windbreak Dike Road (~8,213 cy) and Gold Dike Road (~1,907 cy). This roadbed preparation should ensure road stability and maintain the dike integrity for SLWA operations. An additional six inches of road rock may be added post-construction of the island if it is determined that the dike road has subsided due to truck traffic. Six turnouts, each roughly 100 feet in length by 10 feet wide (~900 cy) will be constructed approximately every 0.5 miles along Windbreak Dike where existing lateral dikes radiate outward into the marsh. One turnout (~150 cy) would be constructed along Gold Dike Road. The turnouts are to facilitate traffic flow.

AFFECTED ENVIRONMENT

General

The land and water areas of the Summer Lake Wildlife Area are the property of the Oregon Department of Fish and Wildlife. ODFW operates and maintains an extensive system of dikes and water control structures for management of emergent marsh habitat at SLWA for waterfowl, shorebirds and other wildlife species that are resident or fall/spring migrants through the basin. Some adjacent upland areas on the SLWA are managed for agricultural crop production for wildlife. Cattle grazing and hay production does occur on adjacent private lands. Wildlife observation and recreational hunting, principally for waterfowl, represent primary uses of the SLWA.

Soils and Topography

Soils information was copied verbatim from the draft Summer Lake Wildlife Area Management Plan. That document can be accessed at:

http://www.dfw.state.or.us/agency/commission/minutes/07/july/F_3_summerlake.pdf for more detailed information.

SLWA is located at the north end of Summer Lake, which was formed by fault block geological activity. Summer Lake is a forty square mile alkaline lake (elevation 4,146-4,151 feet) which lies in a playa basin bounded by Winter Ridge (elevation 7,134 feet) to the west and Diablo Mountain (elevation 6,145 feet) to the east. SLWA is within the Pleistocene era lakebed of Lake Chewaucan that inundated most of Lake County over 10,000 years ago.

The topography of SLWA is relatively flat with a gradual slope from north to south. Elevation change in most of the marsh area is about 3 to 5 feet per mile. Considerable heterogeneity exists throughout the wildlife area and very noticeable upland ridges are prevalent, reflective of ancient lakebed shorelines or dune formation that occurred during dry cycles. Elevation on the north end of SLWA is about 4,500 feet, and at the south end, at lake level, of 4,150 feet.

Soils are primarily ancient lakebed sediments of silts and sands several hundred feet in depth. Geologic research has documented several layers of volcanic ash deposits from Mount Mazama, Mount St. Helens and other volcanic events. Since SLWA is in a closed basin characterized by dry climatic cycles, salts and other minerals are brought to the surface by intense evaporation, resulting in moderate to severely alkaline soil conditions. Frequent strong winds transport soil, salts and minerals throughout the basin primarily from the lakebed to the surrounding uplands. Dunes developed by wind characterize many portions of the upland habitats.

Quarry Materials

The quarry material that will be used for the new island fill is alluvial sandy gravel and gravelly sand. This material is located in the active ODFW pit on the SLWA. Rip rap to be used would come from an operational local quarry near the project area if one can be located that is within a reasonable hauling distance. Rocks up to 200 pounds will be used for riprap on the sides of the East Link and Gold Dike islands, if available. Otherwise, a sacrificial area of regular quarry

material will be established on the perimeter at each island to address the minimal erosion anticipated.

Sediment/Water Quality

Summer Lake and wetlands on SLWA are primarily fed by Ana River which has a current year-round flow of 80-90 cubic feet per second (cfs). Ana River arises from a series of springs situated below and impounded by Ana Reservoir, located about six miles north of Summer Lake proper. Rate of groundwater discharge from Ana River springs has generally declined during the past several decades. Based on Oregon Water Resources Department (OWRD) information this decline will likely continue in the future from drought cycles and continued home development in the basin. Other small springs and seeps plus three artesian wells historically provided an additional 10-25 cfs, and are similarly affected by declining groundwater resources.

The sediment and water quality of Summer Lake are anticipated to reflect local conditions. Periodic storms and precipitation events, can deliver significant quantities of run-off of generally low quality (very fine and alkali salt laden silts). No major industrial or urban centers are located in the watershed that would serve as a source of pollutants. Coliform bacteria arising from human presence is likely very low due to the very low and dispersed population base and relatively limited recreational use in the area. The input of coliform bacteria from livestock is probably minimal due to the dry climate which would limit transport to the lake. Local agricultural activities associated with native hay and alfalfa production require none (native hay) or limited inputs of fertilizers and herbicides compared to row crops, and in conjunction with the arid nature of the basin are unlikely to result in much agricultural runoff to Summer Lake.

Vegetation

The proposed island locations in East Link and Gold Dike units are located approximately 600 feet from their adjacent dikes and are comprised of unvegetated, alkali lakebed soils. Emergent marsh vegetation does occur near the Gold Dike location. Dutchy Lake is an example of a permanently flooded wetland at SLWA that holds water all year and is dominated by rooted aquatic vascular plants such as sago (*Stuckenia pectinata*) and other pond weeds; water butter-cup (*Ranunculus aquatilis*), water milfoil (*Myriophyllum* sp.), and widgeon grass (*Ruppia maritima*). This habitat is typically surrounded by robust tall emergents. Water depths range from two to six feet deep.

Fish and Wildlife Resources

Information on fish and wildlife resources at the SLWA was derived virtually verbatim from the draft Summer Lake Wildlife Area Management Plan. That document can be accessed at: http://www.dfw.state.or.us/agency/commission/minutes/07/july/F_3_summerlake.pdf for more detailed information.

Wetland dependent or wetland obligate wildlife, primarily birds, is the major wildlife resource on SLWA. Over 250 species of birds have been recorded on SLWA, and over 100 species are confirmed breeders. Comprehensive inventory data for mammal and amphibian and reptile (herptile) species on SLWA is lacking, but it is estimated that at least 40 mammal and 15 herptile species may be present on the area. Invertebrate occurrence and abundance has not been inventoried and is unknown.

Birds are the most important and dominant component at SLWA in terms of abundance and species diversity. Waterfowl and shorebirds are major species complexes utilizing SLWA. Breeding season

use of these birds has expanded dramatically over the past 25 years in response to wetland habitat management activities. Migration use has changed in terms of timing and peak numbers of individuals over time, but remains significant and of critical importance to Pacific Flyway waterbirds. Habitat management activities and improvement projects have been designed with wildlife diversity as a focus and essentially all species utilizing SLWA have benefited. SLWA plays an important and balanced role in meeting life-cycle needs for a wide variety of species that are lacking on surrounding developed lands in the basin.

SLWA has significant breeding populations of ducks (13 species represented) and Canada geese that are important to Pacific Flyway waterfowl populations. The diverse habitat base at Summer Lake supports these breeding species and others which is an important contribution to continental waterfowl population goals. Equally important is the provision of secure late semi-permanent wetlands that provide considerable molting habitat for local and regional duck populations, especially mallards. SLWA supports immense populations of migrant ducks and geese numbering in excess of 5 million waterfowl use days (WUDs) annually.

SLWA supports significant populations of breeding and migrant shorebirds. Spring use on SLWA is dictated largely by weather patterns and can be either brief or protracted as different species or groups move through the region. Pre-migration physical condition is influenced by weather conditions and probably affects staging population size and length of stay. Generally, good to excellent habitat conditions coincide with spring migration time periods. Within managed portions of SLWA, drawdowns, caused by management action or increased evapotranspiration, expose mudflats, which produce favorable foraging conditions that extend well into the breeding season. Fall use is generally protracted, beginning as early as late June and extending into October as non-breeding and unsuccessful breeders return from northern breeding locales en route to southern wintering areas. Weather and climatic patterns significantly affect this use. During wet cycles when Summer Lake retains water through the summer shorebird use is large in magnitude and duration. Conversely during periods of extended drought, Summer Lake is largely dry and suitable habitat conditions are provided only on SLWA's managed wetlands.

A colony of nesting waterbirds has historically occurred on a series of small natural islands (Gull Islands) at the head of Summer Lake and recent estimates are as follows:

- California gull 500-750 pairs
- Ring-billed gull 500-750 pairs
- Double-crested cormorant 20-25 pairs
- Caspian tern 5-35 pairs
- American white pelican 5-10 pairs

Colonial nesting waterbirds find suitable conditions on Gull Islands during wet cycles when the islands are surrounded by deep water providing security from disturbance and access by mammalian predators. During dry periods when lake levels are low a land bridge or very shallow water conditions negate this security, and breeding does not occur. Recent, pioneering by nesting Caspian terns and double-crested cormorants has occurred within managed wetlands in Gold Dike and E. Link habitat management units.

Passerine species are very numerous during migration periods, utilizing wetlands as well as tree and shrub components of upland habitats found on SLWA. Over 50 species are known to breed on the wildlife area.

Furbearers present include beaver (*Castor canadensis*), bobcat (*Lynx rufus*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), and raccoon (*Procyon lotor*). Muskrat are especially numerous throughout SLWA wetlands. This species provides considerable habitat benefits through vegetation

clipping and house construction, but sometimes causes major problems in dikes and levees due to burrowing activity and den construction.

Species that occur in good numbers include coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), long-tailed weasel (*Mustela frenata*), Nuttall's cottontail (, yellowbellied marmot (*Marmota flaviventris*), Belding's and California ground squirrels (*Spermophilus beecheyi* and *Citellus beldingi*), small microtines and mice (species occurrence or abundance is unknown). Species that occur but are less numerous include black-tailed jackrabbits (*Lepus californicus*), pocket gophers *Thomomys townesendii*, kangaroo rats (*Dipodomys ordii*), porcupine (*Erithizon dorsatum*), chipmunks (*Eutamias* spp), woodrats (*Neotoma* sp), feral cats (*Felis domesticus*) and cougar (*Felis concolor*).

Three bat species have been confirmed on SLWA including the long-eared *Myotis* (*Myotis evotis*), little brown *Myotis* (*Myotis lucifugus*) and the Yuma bat (*Myotis yumanensis*). These bats forage extensively and have a maternity roost at the Headquarters Complex.

Native species of snakes, lizards and frogs are plentiful on the area, as are introduced bullfrogs. Long-toed salamanders (*Ambystoma macrodactylum*) occur on SLWA. Bullfrogs (*Rana catesbeiana*) (date of introduction unknown) have expanded dramatically along the west side of the valley. Recently, additional expansion has been noted into interior marsh areas extending along Ana River above the River Ranch. Pacific tree (*Pseudacris regilla*) frogs are numerous and can be found scattered throughout SLWA. Great Basin spadefoot toads (*Scaphiopus intermontanus*) are found primarily at the north end of SLWA but abundance is unknown. Western toads (*Bufo boreas*) are extensive in their distribution and fairly abundant. Western fence (*Sceloporus occidentalis*), northern sagebrush (*Sceloporus graciosus*), leopard (*Crotaphytus wislizenii*), side-blotched (*Uta stansburiana*), and desert horned lizards (*Phrynosoma platyrhinos*) and Western skinks (*Eumeces skiltonianus*) are known to occur. Garter (*Thamnophis sirtalis*), gopher (*Pituophis melanoleucus*), rattlesnake (*Crotalus viridis*) and night snakes (*Hypsiglena torquata*, and racers *Coluber constrictor*) can be found on SLWA.

Summer Lake Tui chub (*Gila bicolor* ssp) historically inhabited the Ana River and associated springs. However, chemical treatment projects to improve the recreational fishery and illegal introductions, of primarily Goose Lake tui chubs as bait fish have impacted this population in Ana River and reservoir. In 1993, Summer Basin tui chub were located in a few isolated springs in Summer Lake Basin, but not found on SLWA or adjoining waters. Tui chubs (Goose Lake tui chubs x Summer Lake tui chubs) inhabit nearly all the waters of SLWA from Ana Reservoir to the head of the Summer Lake. They are sometimes spatially and temporally abundant providing a very important forage base for a wide variety of fish, mammals and waterbirds. Tui Chub captured while electro shocking the Ana River have ranged in size from ½ inch to 10 inches in total length. Sterile hybrid bass (white and striped bass cross) fingerlings were first introduced into Ana Reservoir in 1982. Ana Reservoir is stocked with 2,000 fingerling hybrid bass approximately every two years. This trophy hybrid bass fishery makes Ana Reservoir one of Lake County's most popular fishing destinations. Fishing occurs year round with the most productive fishery occurring in late winter and early spring.

Catchable (8-12") rainbow trout are stocked in Ana Reservoir during spring and summer months, while fingerling rainbow trout are stocked in Ana River below the dam. Surplus brood trout when available have been stocked into Ana River and Ana Reservoir. This system has been stocked since the early 1940s and no natural spawning of trout is known to occur. Ana Reservoir provides a year round fishery for stocked rainbow trout, since springs beneath the reservoir keep water ice free and at a temperature above freezing during winter months. The majority of the recreational angling

occurs between Ana Reservoir and River Ranch Campground. The hatchery trout fingerlings released into the Ana River reach harvestable size in approximately one growing season. Size range of trout in the Ana River range between the fingerling plants (approximately 3") up to fish over 20".

Both hybrid bass and rainbow trout have been observed lower in the river, but the extent of the fishery is estimated to be only four miles below the reservoir. White sturgeons, escapees from a private fish farm north of and adjacent to SLWA, have been caught in Ana River. Largemouth bass and bluegill inhabit a small watercourse near the Headquarters Complex downstream from private ponds. The extent of their distribution into SLWA wetlands is unknown. No largemouth bass or blue gill have been observed during electro fishing or while conducting snorkel surveys. In 1993, California pit roach, believed to have been introduced as bait fish, were discovered in the Ana River.

Threatened and Endangered Species

Federally-listed species that may occur in the project vicinity include Warner sucker. The Warner sucker's natural range occurs in the Warner Basin and includes the permanent (usually) lakes (Hart, Crump and Pelican), ephemeral lakes, sloughs, and lower gradient streams in that area. Where once the species was abundant and widely-distributed in the Basin, it now maintains sizable numbers in only a few habitats.

Translocated Warner suckers exist at the SLWA in a closed basin comprised of two ditches and two ponds that are maintained by artesian well flow from Middle Well. They exist as a translocated population, brought to SLWA in 1991 to be held prior to transfer to a propagation facility. While being held, they successfully spawned and their numbers are now estimated to be 100-200 fish.

Bald eagles, formerly a Federally-listed species, occur on the SLWA but are no longer subject to ESA provisions.

Cultural Resources

The Paiute Tribe was the primary Native American Nation indigenous to this area. In addition other tribes utilized SLWA's favorable climate and abundant natural resources for food procurement. Many species of vegetation provided food and shelter. Waterbirds, fish and mammals on SLWA were suspected to be very abundant during most of the year with the exception of winter. Campsites as evidenced by house -pits, petroglyphs, and tool manufacturing sites are located throughout SLWA and in uplands surrounding the basin, confirming significant use of SLWA's wetlands. Lithic points and other artifacts can be found scattered throughout the marsh area.

In the late 1800s, European settlement began with the homesteading of the area and development of the livestock industry. Livestock grazed in the drier upland areas while native marsh and meadow vegetation was irrigated and cut for hay. In the early 1920's, major developments were undertaken to divert water for irrigation purposes, causing major changes to the natural hydrology and lake ecosystem.

Socio-Economic Uses

The Summer Lake Wildlife Area is surrounded by predominantly agriculture and rural residential land uses. The principal socio-economic uses occurring in the Summer Lake area are raising livestock, harvest of native grass and alfalfa hay, recreational fishing for introduced species, recreational hunting and wildlife observation activities. Waterfowl hunting is a major activity on SLWA. Big game and upland gamebird hunting occurs in the fall on lands throughout or adjacent to Summer Lake. Ana Reservoir and a four mile stretch of the Ana River provide trout fishing opportunities.

ENVIRONMENTAL EFFECTS

Soils

Direct impacts to soils within the East Link and Gold Dike management units will occur from construction activities. The principal impact will result from construction of the islands, covering soils at the East Link and Gold Dike locations with rock and borrow material hauled to the site from a local quarry. The access roads into these units are temporary in nature and thus there impacts will also be temporary. Dike road maintenance actions will occur prior to construction of the tern nesting islands. There will be some side slope adjustments for those sections initially graded down one foot in elevation as this material will be used to widen the base of the road slightly. This will result in some coverage of soil along the edge of the road in the wetland management units.

The East Link Island construction impact will be approximately 0.67 acres in extent at the base; Gold Dike Island will impact 0.71 acres at the base. Access to the East Link and Gold Dike island sites will primarily be on existing Lake County and SLWA roads. Constructed haul roads within East Link (~0.26 acres) and Gold Dike (~0.28 acres) will entail temporarily covering the routes with a geotextile grid and quarry waste. The temporary roadbed may consist of a layer of BX1200 geogrid on the ground surface, a 12 inch layer of quarry waste, another layer of geogrid and an additional 6 inches of quarry waste. The geotextile grid is intended to support the quarry waste to be used as roadbed and prevent or at least lessen pumping of fine grained materials from the bed of the wetland management units.

Four turnouts, to allow for passing of trucks, will be constructed adjacent to the SLWA access roads to East Link Unit: one at the junction of Thousand Springs Lane and River Ranch Road; one at the 0.5 mile marker on River Ranch Road; one at the junction of River Ranch Road and Schoolhouse Dike Road and the fourth at the junction of East Link Dike Road and the temporary haul road to the East Link Island. Six turnouts will be constructed along Windbreak Dike, to be constructed at existing lateral roads. One turnout will be constructed along the Gold Dike Road. Turnouts are approximately 100' in length by 10' in width and are parallel to the existing roads. These turnouts may remain post-construction at the discretion of the SLWA manager. These turnouts will not add significantly (~0.25 acres) to the acreage impacted. Post-construction, the temporary roadbeds will be removed and the material placed on additional sections of East Link and Gold Dike roadbeds. The impact of the haul roads within the wetland management units should be temporary in nature. The local ODFW quarry has already been opened and borrow operations will remain within the previously disturbed footprint, thus impacts to soil there have already occurred. Other than the minor construction impacts identified, no significant impacts to soils are expected.

Sediment/Water Quality

Sediments with contaminate levels of concern are not expected to occur at Summer Lake. The exposed materials at the island location after construction will consist of native rock derived from an existing ODFW quarry site. Rock from this source does not pose a concern for contamination and have limited potential for erosion and sediment infill to the lake. Also, construction is anticipated to occur when the wetland management units are dry, which coupled with the placement of rock, is expected to preclude in-water construction turbidity and sediment concerns.

Vegetation

Minimal vegetation impacts are associated with the haul road in the wetland management units (East Link and Gold Dike). Any impact would occur at the intersection of the dike road and the temporary haul road. A minor impact to upland/wetland unit vegetation may occur from road maintenance actions along the dike roads used for construction traffic. This impact would occur from grading, leveling and side slope adjustment. The islands in East Link and Gold Dike units are located in areas barren of vegetation. Localized impacts to small areas of shrubs, grasses and forbs may occur at the local quarry during borrow operations.

The placement of a 0.5 acre floating island in Dutchy Lake will impact a like area of submergent aquatic plants. The shading affect from the island will result in the loss of aquatic vegetation beneath the floating island.

Fish and Wildlife Resources

Construction and implementation of the nesting areas will benefit Caspian terns and perhaps other colonial nesting species such as double-crested cormorants, gull species and white pelicans that occur in the Summer Lake area by providing suitable nesting habitat. Attraction of Caspian terns to the nesting islands will be facilitated by the employment of decoys and a sound system playing Caspian tern vocalizations recorded from an existing colony.

Wildlife resources using SLWA are not anticipated to be significantly impacted by the construction action. Some disturbance impacts to wildlife would be expected to occur from construction traffic on the existing access roads and the quarry operation. Construction of the East Link and Gold Dike nesting islands would occur in the dry which substantially limits the number of wildlife species that could be present. Construction during late summer after most species have completed nesting/brood rearing activities also lessens the potential for impacts.

Impacts to wildlife using Dutchy Lake will occur during construction. The lake is sufficiently large that displaced wildlife will move to other areas during construction activities which will consist of placement of modules in the lake, combining them together, placement of the anchorage system and emplacing the floating island. The loss of submergent aquatic vegetation under the island will result in a 0.5 acre reduction in food resources, principally for waterfowl and other waterbirds.

Fisheries resources at the SLWA are not anticipated to be impacted from construction actions that would occur when the East Link and Gold Dike wetland management units have been dewatered for vegetation management purposes. The waterbodies in and around the SLWA provide an adequate prey base for Caspian terns, principally tui chubs. Establishment of a Caspian tern nesting colony at SLWA is not anticipated to noticeably lower the population of any fish species in the area. Caspian terns nesting at SLWA can be anticipated to forage primarily on tui chub; trout and sunfish (crappie and bass) are expected to be minor components in their diet.

Overall, no long term negative impacts to biological resources are expected from implementation of this proposal. Colonial nesting bird species are expected to benefit from the proposed action through development of permanent, secure nesting islands.

Threatened and Endangered Species

Biological Assessments (BA) were prepared for the Caspian tern FEIS that addressed listed species in the vicinity of Summer Lake that might be affected by development of nesting habitat for terns or from tern foraging activities on fisheries resources. The USFWS prepared a biological opinion addressing the potential impacts to listed species under their jurisdiction. These documents are available at https://www.nwp.usace.army.mil/pm/e/en_plan_avian.asp.

A translocated population of Warner Suckers is located on the SLWA. Warner suckers were translocated to Summer Lake in 1991 from the Warner Valley, their native range, during a severe drought. Prior to recapture and transport to a USFWS hatchery for propagation, the translocated fish successfully spawned and their progeny were able to escape through the fish screens. An estimated 150 Warner suckers are present at the SLWA.

These escaped Warner suckers are now resident in the ditch that transports artesian well water from Middle Well to Upper Sulfur Well Pond. Middle Well provides a constant source of water year around. The ditch from Middle Well to Upper Sulfur Well Pond is approximately four feet wide and approximately 4-6" deep on average with a few areas of deeper water (to 12-18") and is overgrown by bank vegetation.

Warner suckers may also be present in Upper Sulfur Well Pond which has approximately one acre of open water surface. This pond is surrounded by emergent vegetation. By approximately mid-June, submergent aquatic plants dominate the water surface. Water depth in Upper Sulfur Well Pond is approximately 3-4 feet.

A narrow, constructed ditch conveys water from Upper Sulfur Well Pond to Lower Sulfur Well Pond. This ditch is approximately 1-2 feet wide with a maximum depth of one foot, although typically much shallower. Vegetation virtually obscures the narrow channel. Lower Sulfur Well Pond has a surface water area of approximately 3-4 acres. This pond is estimated to be approximately 3-4 feet in depth also. To date, it has not been determined that Warner suckers inhabit either the narrow ditch from Upper to Lower Sulfur Well Pond or the lower pond.

The Corps has initiated consultation with the USFWS regarding this translocated population of Warner suckers at the SLWA. Our determination is that the proposed action may affect, but is not likely to adversely affect Warner suckers. This determination is based upon the narrowness, vegetation overgrowth, and shallow nature of the ditches which would preclude plunge dives by Caspian terns. Further, both Upper and Lower Sulphur Well Ponds have adequate depth, which coupled with the Warner suckers bottom dwelling habits and dense growth of submergent aquatic vegetation are expected to preclude these Warner suckers from being preyed upon by Caspian terns.

Cultural Resources

Based on the island construction locations and methods, coupled with the use of existing access roads and quarry, the proposed project is anticipated to have minimal or no effect on cultural resources. A report to the State Historic Preservation Office on the proposed action will be completed prior to construction. Site monitoring will be incorporated if determined necessary.

Socio-Economic Uses

The proposed actions in the SLWA will not result in any noticeable impact to socio-economic uses in the area. No impacts to agricultural related activities are foreseen. Closure or modified traffic patterns on some SLWA roads may occur during construction. The county roads (Thousand Springs Lane, Carlon Lane) will remain open as will State Highway 31. Gravel access roads will be watered where necessary and construction speeds limited to minimize impact on local and recreational (wildlife observers) traffic.

COORDINATION

This Draft EA will be distributed for a 20-day public review. Review comments are requested from federal, state, and local agencies, as well as various interested parties. Many of these agencies and parties will be sent a copy of the draft EA, including the following:

U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
National Marine Fisheries Service
Bureau of Land Management - Lakeview
Burns Paiute Tribe
Klamath Reservation General Council
Confederated Tribes of the Warm Springs Reservation
Oregon State Historic Preservation Office
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Department of Water Resources
Oregon Department of State Lands
Oregon Parks and Recreation Department
Lake County Commissioners
Columbia River Inter-Tribal Fish Commission
Northwest Indian Fisheries Commission
Northwest Power and Conservation Council
Columbia Basin Fish and Wildlife Authority
Columbia River Estuary Study Taskforce
National Audubon Society
Seattle Audubon Society
Portland Audubon Society
American Bird Conservancy
Defenders of Wildlife
The Nature Conservancy
Native Fish Society
Oregon Trout
Federation of Fly Fishers
Salmon for All

CONSULTATION REQUIREMENTS

a. National Environmental Policy Act: This Environmental Assessment satisfies the requirements of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.). The Final Environmental Impact Statement (2005) for *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary* was a programmatic document that addressed the overall management concerns.

- b. Clean Water Act of 1977 (33 USC 1344): The proposed action is in compliance with Section 404 (b)(1) of the Clean Water Act under Nationwide Permit No. 27, which authorizes the construction of small nesting islands. Nationwide Permit No. 3 allows for the repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure or fill. This pertains to repair of existing dike roads in the SLWA. Nationwide Permit No. 3 provides for minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Section 401 Water Quality Certification for Nationwide Permits No. 3 and No. 27 is provided in a letter from the Oregon Department of Environmental Quality dated July 18, 2007.
- c. Coastal Zone Management Act of 1972, as amended: Summer Lake does not occur within the Coastal Zone.
- d. Endangered Species Act of 1973, as amended: Biological opinions were received from the USFWS and NMFS for the proposed action in the programmatic level EIS. The proposed action may affect, but is not likely to adversely affect, threatened or endangered species under the jurisdiction of USFWS. A translocated population of Warner sucker was inadvertently established at SLWA and is the only species listed by the USFWS for the location. Informal consultation with the USFWS regarding this translocated population is underway and will be completed prior to construction initiation.
- e. Fish and Wildlife Coordination Act: The proposed action has been coordinated with the USFWS in compliance with this Act. The USFWS was the lead agency for the 2005 *Caspian Tern Management to Reduce Predation of Juvenile Salmonids in the Columbia River Estuary, Final Environmental Impact Statement* (USFWS et al., 2005). The proposed action was developed in concert with the USFWS during the EIS process.
- e. Wild and Scenic Rivers Act: Summer Lake is not a Wild and Scenic River.
- f. Marine Protection, Research and Sanctuaries Act of 1972, as amended: Summer Lake is an interior Oregon, non-coastal location, thus this act does not pertain.
- g. Cultural Resources Acts: Consultation for compliance with Section 106 of the National Historic Preservation Act, as amended, is in progress.
- h. Executive Order 11988, Flood Plain Management, 24 May 1977: The proposed action would occur within managed wetlands of the Summer Lake Wildlife Area, thus within the floodplain, but the approximately 1.5 acre impact would have no adverse effect on flood plains or flood heights.
- i. Executive Order 11990, Protection of Wetlands, 24 May 1977: The proposed action would occur within managed wetlands of the Summer Lake Wildlife Area. The approximately 1.5 acre impact would represent a minor impact to the large wetland base of the area. Typical management actions on the wildlife area call for periodically dewatering the managed wetland areas on a rotation basis in order to manage wetland vegetation and increase wetland productivity.
- j. Analysis of Impacts on Prime and Unique Farmlands: The proposed work would occur within the Summer Lake Wildlife Area, thus there it would not affect any prime or unique farmlands.

- k. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The proposed action is not a listed CERCLA site.
- l. Migratory Bird Treaty Act: The proposed action would benefit migratory birds.
- m. Magnuson-Stevens Fishery Conservation and Management Act (MSA): We received the Biological Opinion and MSA Consultation from the NMFS dated February 16, 2006 for the programmatic FEIS. Recommendations to conserve EFH for coho and Chinook salmon were included as part of the biological opinion. However, no ESA species under the jurisdiction of the NMFS occurs at Summer Lake, Oregon.
- n. Clean Air Act: The Clean Air Act of 1970, as amended, established a comprehensive program for improving and maintaining air quality throughout the United States. Its goals are achieved through permitting of stationary sources, restricting the emission of toxic substances from stationary and mobile sources, and establishing National Ambient Air Quality Standards (NAAQS). Title IV of the Act includes provisions for complying with noise pollution standards. The proposed action is in compliance with this act.
- o. Native American Graves Protection and Repatriation Act: The Native American Graves Protection and Repatriation Act (NAGPRA) provides for the protection of Native American and Native Hawaiian cultural items, established ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also establishes requirements for the treatment of Native American human remains and sacred or cultural objects found on federal land. This Act also provides for the protection, inventory, and repatriation of Native American cultural items, human remains, and associated funerary objects. Any discoveries will be handled according to Portland District policy.
- p. The Bald and Golden Eagle Protection Act: As described above there will be no impacts to bald eagle or their habitat from implementation of this project. No nesting habitat for either species is located at the island construction sites.
- q. Executive Order 12898, Environmental Justice: This executive order requires federal agencies to consider and minimize potential impacts on subsistence, low-income or minority communities. The goal is to ensure that no person or group of people should shoulder a disproportionate share of the negative environmental impacts resulting from the execution of this country's domestic and foreign policy programs. This proposed action is in compliance with Executive Order 12898.

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